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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/721,304

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Hirotake Nakamura

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PITNEY HARDIN LLP

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NEW YORK, NY 10036-7311

EXAMINER

UHLENHAKE, JASON S

ART UNIT

PAPER NUMBER

2853

DATE MAILED: 03/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/721,304	Applicant(s) NAKAMURA, HIROTAKE	
	Examiner Jason Uhlenhake	Art Unit 2853	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Mochizuki et al (U.S. Pat. 6,059,405).

Mochizuki et al discloses:

- ***regarding claim 1***, ink-jet recording apparatus comprising an ink-jet printing head (Figure 2: 4,5) which ejects, to a recording medium (Figure 1, Column 2 Lines 50-65), the ink through nozzles (Column 4 Lines 4 – 23, Column 6 Lines 10 – 38)
- First ink-introducing step of initially introducing a first ink into said ink-jet printing head when printing head is initially used, said first ink having a first degree of deaeration (Column 3, Lines 65 – 67; Column 4, Lines 1 - 10)
- Second ink-introducing step of introducing a second ink into said ink-jet printing head after said first ink-introducing step, said second ink having a second degree of deaeration, which is lower than said first degree of deaeration (Column 4, Lines 47 – 56)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 8 are rejected under 35 U.S.C. 103(a) as being obvious over Mochizuki et al (U.S. Pat. 6,059,405) in view of Sakanobe et al (U.S. 6,286,934)

Mochizuki et al discloses:

- ***regarding claim 2***, an initial-use ink package accommodating said first ink introducing said first ink into said ink-jet printing head; wherein said initial-use ink package is in a state which is enclosed such that said first ink in said initial-use ink package maintains said first degree of deaeration which is higher than said second degree of deaeration of said second ink in said replacement ink package. (Figure 5; Column 1, Lines 27 – 41)

- ***regarding claim 8***, wherein the ink packages include an ink bag whose opposite major surfaces are constituted by a pair of flexible walls, and a rigid ink-bag casing which accommodates said ink bag (Figure 5; Column 1, Lines 27 – 41)

Mochizuki et al does not disclose expressly:

- ***regarding claim 2***, a mounting portion on which an ink package accommodating the ink is removably mounted, mounting said ink package, a replacement ink package, accommodating second ink on said mounting portion, said replacement ink package replacing said ink package which has been mounted on said

mounting portion immediately before said replacement ink package and introducing said second ink into said ink-jet printing head

Sakanobe et al discloses the following:

- ***regarding claim 2***, a mounting portion on which an ink package accommodating the ink is removably mounted (Paragraph 0067); mounting said ink package, a replacement ink package, accommodating said second ink on said mounting portion, said replacement ink package replacing said ink package which has been mounted on said mounting portion immediately before said replacement ink package and introducing said second ink (Paragraph 0011). The concept of a mountable ink package as disclosed by Sakanobe et al can be used to hold the first ink and the ink package disclosed can hold the second ink disclosed by the applicant, and be used as a replacement for the initial ink package.

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to incorporate the teaching of a mounting portion which an ink package accommodates said first ink, or said second ink, and said initial-use ink package or replacement package on said mounting portion, as taught by Sakanobe et al into the device of Mochizuki et al. The motivation for doing so would have been to provide an ink package assembly arranged to minimize deterioration of ink.

Claims 3, 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mochizuki et al (U.S. Pat. 6,059,405) as modified by Sakanobe et al (U.S. 6,286,934),

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as applied to claim 1 above, and further in view of Ardito (U.S. Pub. 2002/0191056), and Anderson et al (U.S. Pat. 6,837,577)

Mochizuki et al as modified by Sakanobe et al discloses the all of the claimed limitations except for the following:

- ***regarding claim 3***, ink package is enclosed in a sealing wrapper whose interior space is evacuated to a pressure lower than an atmospheric pressure
- ***regarding claim 4***, a step of taking ink package out of said sealing wrapper

Ardito discloses:

- ***regarding claim 3***, , ink package is enclosed in a sealing wrapper (Figure 1; Paragraph 0020), for the purpose of preventing deformation or breakage of an ink package
- ***regarding claim 4***, a step of taking ink package out of said sealing wrapper (Paragraph 0020), for the purpose of preventing deformation or breakage of an ink package

Anderson et al discloses:

- ***regarding claim 3***, interior space is evacuated to a pressure lower than an atmospheric pressure (Column 7, Lines 12 – 20), for the purpose of providing fluid communication with an ink source.

At the time the invention was made it would have been obvious to a person of ordinary skill in the art to incorporate the teaching of ink package is enclosed in a sealing wrapper whose interior space is evacuated to a pressure lower than an

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atmospheric pressure; a step of taking ink package out of said sealing wrapper as taught by Ardito and Anderson into the device of Mochizuki et al as modified by Sakanobe et al. The motivation for doing so would have been to prevent deformation or breakage of an ink package and provide fluid communication with an ink source.

Claims 5, 6, 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mochizuki et al (U.S. Pat. 6,059,405) as modified by Sakanobe et al (U.S. 6,286,934), as applied to claim 1 above, and further in view of Ardito (U.S. Pub. 2002/0191056), and Matsumoto et al (JP 61141560 A)

Mochizuki et al as modified by Sakanobe et al discloses the all of the claimed limitations except for the following:

- ***regarding claim 5***, ink package is enclosed in a sealing wrapper whose interior space is charged with an inert gas that has a degree of solubility in the ink lower than the air
- ***regarding claim 6***, step of taking ink package out of said sealing wrapper before mounting
- ***regarding claim 7***, wherein said inert gas is a helium gas

Matsumoto et al discloses the following:

- ***regarding claim 5***, ink package is enclosed in a sealing wrapper whose interior space is charged with an inert gas that has a degree of solubility in the ink lower than the air, (Abstract) for the purpose of providing an ink-package assembly arranged to minimize deterioration of deaeration of ink.

- **regarding claim 7**, wherein said inert gas is a helium gas (Abstract) for the purpose of providing an ink-package assembly arranged to minimize deterioration of deaeration of ink.

Ardito discloses:

- **regarding claim 6**, step of taking ink package out of said sealing wrapper before mounting (Paragraph 0020), for the purpose of preventing deformation or breakage of an ink package

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to incorporate the teaching of ink package is enclosed in a sealing wrapper whose interior space is charged with an inert gas that has a degree of solubility in the ink lower than the air; step of taking ink package out of said sealing wrapper before mounting; wherein said inert gas is a helium gas as taught by Matsumoto et al and Ardito into the device of Mochizuki et al as modified by Sakanobe et al. The motivation for doing so would have been to provide an ink-package assembly arranged to minimize deterioration of deaeration of ink and prevent deformation or breakage of an ink package.

Claims 9,10,11,12,13, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mochizuki et al (U.S. Pat. 6,059,405) in view of Ardito (U.S. Pub. 2002/0191056), Anderson et al (U.S. Pat. 6,837,77), Matsumoto (JP 61141560 A), and Saito et al (U.S. Pat. 4,970,533).

Mochizuki et al discloses the following:

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- **regarding claim 9**, an ink-jet recording apparatus comprising an ink-jet printing head having nozzles through which ink is ejected to a recording medium (Mochizuki et al: Column 4 Lines 4 – 23, Column 6 Lines 10 – 20)
- a first ink of a first degree of deaeration and a second ink having a second degree of deaeration (Column 3, Lines 65 – 67; Column 4, Lines 1 - 10, Lines 47 – 56)
- **regarding claim 10**, wherein said initial-use ink package is in a state which is enclosed such that said first ink in said initial-use ink package maintains said first degree of deaeration which is higher than said second degree of deaeration of said second ink in said replacement ink package (Figure 5; Column 1, Lines 27 – 41)
- **regarding claim 14**, wherein the ink packages include an ink bag whose opposite major surfaces are constituted by a pair of flexible walls, and a rigid ink-bag casing which accommodates said ink bag (Figure 5; Column 1, Lines 27 – 41)

Mochizuki et al does not disclose the following:

- **regarding claim 9**, an ink package which ink that is to be introduced into said ink-jet printing head is accommodated, and said ink package is removably mounted
- an initial-use ink package to accommodate a first ink and a replacement ink package to accommodate a second ink, said initial-use ink package and said replacement package selectively mounted on a mounted portion;
- **regarding claim 11**, initial-use ink package is in a state in which said initial-use ink package is enclosed in a sealing wrapper whose interior space is evacuated to a pressure lower than an atmospheric pressure

- **regarding claim 12**, wherein said initial-use ink package is in a state in which said initial-use ink package is enclosed in a sealing wrapper whose interior space is charged with an inert gas that has a degree of solubility in the ink lower than the air

- **regarding claim 13**, wherein said inert gas is a helium gas

Ardito discloses the following:

- **regarding claim 11**, , ink package is enclosed in a sealing wrapper (Figure 1; Paragraph 0020), for the purpose of preventing deformation or breakage of an ink package

Anderson et al discloses the following:

- **regarding claim 11**, interior space is evacuated to a pressure lower than an atmospheric pressure (Column 7, Lines 12 – 20), for the purpose of providing fluid communication with an ink source.

Matsumoto et al discloses the following:

- **regarding claim 12**, ink package is enclosed in a sealing wrapper whose interior space is charged with an inert gas that has a degree of solubility in the ink lower than the air, (Abstract) for the purpose of providing an ink-package assembly arranged to minimize deterioration of deaeration of ink.

- **regarding claim 13**, wherein said inert gas is a helium gas (Abstract) for the purpose of providing an ink-package assembly arranged to minimize deterioration of deaeration of ink.

Saito et al discloses the following:

- ***regarding claim 9***, an ink package which ink that is to be introduced into said ink-jet printing head is accommodated, and said ink package is removably mounted (Column 2, Lines 23 – 38, 49 – 59); an initial-use ink package to accommodate a first ink and a replacement ink package to accommodate a second ink, said initial-use ink package and said replacement package selectively mounted on a mounted portion (Column 2 Lines 23-38, 49-59). The concept of a mountable ink package as disclosed by Sakanobe et al can be used to hold the first ink and the ink package disclosed can hold the second ink disclosed by the applicant, and be used as a replacement for the initial ink package. For the purposes of using the same single recording head is continuously while exchanging ink cartridges whenever the ink in each ink cartridge is used up.

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to incorporate the teaching of an ink package which ink that is to be introduced into said ink-jet printing head is accommodated, and said ink package is removably mounted; an initial-use ink package to accommodate a first ink and a replacement ink package to accommodate a second ink, said initial-use ink package and said replacement package selectively mounted on a mounted portion; initial-use ink package is in a state in which said initial-use ink package is enclosed in a sealing wrapper whose interior space is evacuated to a pressure lower than an atmospheric pressure; ink package is enclosed in a sealing wrapper whose interior space is charged with an inert gas that has a degree of solubility in the ink lower than the air; and wherein said inert gas is a helium gas as taught by Ardito, Anderson et al,

Matsumoto and Saito et al into the device of Mochizuki et al. The motivation for doing so would have been to use the same single recording head is continuously while exchanging ink cartridges whenever the ink in each ink cartridge is used up; provide fluid communication with an ink source; and provide an ink-package assembly arranged to minimize deterioration of deaeration of ink.

Response to Arguments

Applicant's arguments filed 30 January 2006 have been fully considered but they are not persuasive. Applicant states that Mochizuki (U.S. 6,059,405), does not disclose that ink initially introduced into the recording head upon initial use has a relatively high deaeration degree while ink that has a lower deaeration degree than the initially introduced ink is subsequently introduced after the initial introduction of the ink. Mochizuki discloses that a first ink is initially introduced to the recording heads (4,5) upon initial use has a relatively high deaeration degree (Column 3, Lines 65 –67; Column 4, Lines 1 – 10) from the main tanks (16-19), and a second ink is introduced into the main tanks (16-19) having a lower deaeration degree after the initial introduction of the ink (Column 4, Lines 47 – 56).

- Applicant's arguments with respect to claim 2- 14 have been considered but are moot in view of the new ground(s) of rejection. Please see the above rejections regarding an initial-use ink package is in a state which is enclosed such that said first ink in said initial-use ink package maintains said first degree of deaeration which is higher than said second degree of deaeration Mochizuki et al (U.S. Pat. 6,059,405) in view of Sakanobe et al (U.S. 6,286,934), regarding interior space is evacuated to a

pressure lower than an atmospheric pressure, Mochizuki et al as modified by Sakanobe et al in view of Ardito (U.S. Pub. 2002/0191056), and Anderson et al (U.S. Pat. 6,837,577), regarding ink package is enclosed in a sealing wrapper whose interior space is charged with an inert gas that has a degree of solubility in the ink lower than the air; step of taking ink package out of said sealing wrapper before mounting and said inert gas is a helium gas, Mochizuki et al as modified by Sakanobe et al, in view of Ardito, and Matsumoto et al (JP 61141560 A), regarding an ink package that is removably mounted; an initial-use ink package to accommodate a first ink and a replacement ink package to accommodate a second ink; initial-use ink package is in a state in which said initial-use ink package is enclosed in a sealing wrapper whose interior space is evacuated to a pressure lower than an atmospheric pressure; ink package is enclosed in a sealing wrapper whose interior space is charged with an inert gas; and said inert gas is a helium gas, Mochizuki et al in view of Ardito, Anderson et al, Matsumoto, and Saito et al (U.S. Pat. 4,970,533).

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason Uhlenhake whose telephone number is (571) 272-5916. The examiner can normally be reached on Monday - Friday 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JSU
February 20, 2006



 3/04
K. FEGGINS
PRIMARY EXAMINER